

## Warming Up Wind Chill

Taking on the Fallacious “Report” by the Centre for Policy Studies

By  
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Normally, I ignore reports such as *Wind Chill* by Tony Lodge at the Centre for Policy Studies.<sup>1</sup> *Wind Chill* is not a study, nor a technical paper. It is, simply, a political screed. As such, it adds nothing to the debate about wind energy. Its data is wrong, misinterpreted or grossly out of date.

Further, I wrote a book about wind energy, admittedly a long time ago, to refute such wild claims at one time.<sup>2</sup> Thus, I am reluctant to write a rebuttal to one report when there is so much other misinformation circulating on the web. I prefer to write a generic response that covers all the claims at one time.

Nevertheless, in the interest of throwing some heat on *Wind Chill*, I’ve touched on a few salient topics here. This is a work in progress and is subject to further additions and commentary as time permits.

### Rebuttal

There is one overriding theme of *Wind Chill*, and the reason for the title, that Europeans are walking away from wind energy as fast as they can. This is so far from the truth—or reality—that it’s hard to know where to start.

Myth: Countries are either backing off in their support of wind energy or are “removing” wind turbines. Here are those I found mentioned in *Wind Chill*.

- Switzerland
- The Netherlands
- Ireland
- Denmark
- Spain
- California

### Fact:

Let’s start with Switzerland. The Alpine country is just beginning its development of new renewable sources so it has hardly had a chance to retrench. In mid 2008

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<sup>1</sup> [Wind Chill](#) by Tony Lodge, Centre for Policy Studies, 2008, visited April 10, 2009.

<sup>2</sup> [Wind Energy Comes of Age](#) by Paul Gipe, John Wiley & Sons, Inc New York (1995), ISBN 0-471-10924-X.

Switzerland in fact chose to emulate Germany and introduced its own Renewable Energy Sources Act and used many of the same tariffs as used in Germany.<sup>3</sup>

The Netherlands. Despite rumors to the contrary, the Dutch continue to install wind turbines.<sup>4</sup> The Netherlands has

- 2,200 Wind Turbines,
- Generated 5 TWh (billion kWh) in 2008,
- Decommissioned: 63 Units, 22 MW in 2008, and
- Installed ~500 MW from 220 Units New in 2008.

Ireland. The Emerald Isle has been installing wind turbines more or less steadily since 1996. Today Ireland has total of 1,200 MW. In 2008, the Irish installed 440 MW and launched new offshore wind tariffs. It doesn't appear that the Irish have turned their back on wind energy.

Denmark

If the Danish people and hence the Danish government are so opposed to wind energy as implied by Wind Chill, why do they continue to support it? This must be one of life's great mysteries.

As recently as February, 2009, the Danish government of the center-right parties agreed—in writing—that the country will continue with wind energy. Not only will they continue with the wind turbines operating today, they will increase the role of wind energy. Here is the energy policy agreement among the ruling parties. Note that the "Liberal" party uses the term liberal in the European context, that is, "free-market liberalism." This coalition is equivalent to Canada's Conservative Party or America's Republican Party. Denmark has been ruled by the right for much of the decade. The Social Democrats are equivalent to the Canada's New Democratic Party or America's Democratic Party.

- "The Conservatives and Liberals have today entered into a comprehensive energy agreement with the Social Democrats, Danish People's Party, Socialist People's Party, Social Liberals and New Alliance. The agreement includes better terms for wind turbines and other sustainable energy sources such as biomass and bio gas. The parties agree that renewable energy should cover 20% of Danish energy consumption in 2011. . . . Aside from significantly raising the transfer rate for electricity from land wind turbines, biomass and bio gas, the parties agree to install 400 MW from new offshore wind turbines by 2012."
- "It is expected that about 1300 MW of wind turbine capacity will be constructed between now and 2012. This includes previously agreed

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<sup>3</sup> [Swiss Adopt Aggressive Feed Law for Renewable Energy](#), visited April 15, 2009.

<sup>4</sup> 2008 Data from [Wind Service Holland](#), visited April 15, 2009.

scrapping plans and the current construction of offshore wind farms at Horns Rev and Rødsand. . .”<sup>5</sup>

Spain. What can I say about Lodge’s startling claim that Spain has abandoned wind energy. Spain is one of the world’s largest markets for wind energy. It’s often been number two in world rankings ahead of the mighty US. Spain has steadfastly maintained its support for wind energy despite changes in government.

- Spain has installed an average of 2,100 MW per year from 2004 to 2008.
- Spain has a total installed capacity of nearly 17,000 MW (behind only the US and Germany)
- Spanish wind turbine manufacturers are now among the world’s leaders.
- Spanish wind companies are now among the world’s largest.
- In 2007, Spain installed more than 3,000 MW, and in 2008; 1,600 MW.
- In 2007, Spain updated and extended its feed-in tariff program.

Australia & Britain. Let’s give one to Lodge here. Neither Australia nor Britain have ever been leaders in wind energy. Both countries have adopted policies championed by Lodge and his cohorts at the Centre for Policy Studies that have strangled growth of not only wind energy but any form of renewable energy. Policies advocated by the CAP and its founders effectively wiped out British manufacturers of wind turbines in the mid 1990s, destroying hundreds of jobs at the time and possibly forever losing the opportunity for the tens of thousands of jobs developed in Germany, Denmark, or Spain.

California: Lodge writes that “California produced only 0.5% of its electricity in the year 2000 from wind turbines.”

Fact: California has been consistently generating more than 1% of its electricity with wind energy since the late 1980s! My calculations, and I have followed this particular statistic for more than 25 years, indicate that wind turbines in California deliver 1.5k% of the state’s electricity—three times that claimed by Lodge. But it gets better, IEA data shows California wind turbines provided 2.3% of the state’s electricity.<sup>6</sup> However, I believe my data is more accurate.

## Denmark and the Closing of Power Plants

Myth:

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<sup>5</sup> Energy policy agreement, 21 February 2008, [http://www.ens.dk/graphics/UK\\_Energy\\_Policy/Danish\\_energy\\_policy/Political\\_agreements/21Feb2008%20Agreement/Factsheet\\_PSO\\_UK\\_210208.pdf](http://www.ens.dk/graphics/UK_Energy_Policy/Danish_energy_policy/Political_agreements/21Feb2008%20Agreement/Factsheet_PSO_UK_210208.pdf), visited April 10, 2009. “Scrapping plans” means that old wind turbines will be taken down and new ones installed in their place.

<sup>6</sup> See [http://www.eia.doe.gov/cneaf/electricity/epa/generation\\_state.xls](http://www.eia.doe.gov/cneaf/electricity/epa/generation_state.xls), visited April 15, 2009.

Wind Chill makes the seemingly sophisticated claim that “However, not a single conventional power plant has been closed in the period that Danish wind farms have been developed.”

Fact:

The author, who has written a book about coal, confuses the most fundamental aspect of electricity: the difference between power and energy. That a power plant hasn't been “closed” is not a significant fact. One does not need to “close” a power plant to reduce or eliminate its pollution. One need not close a plant to not “use” it. Not “using” the plant is what prevents pollution. The author is playing childish games and hoping that unsophisticated readers don't catch on. As a skilled propagandist, Lodge knows his job well.

Myth:

Lodge takes on Danish success by noting that “According to the Copenhagen newspaper *Politiken*, wind met only 1.7% of Denmark's total demand in 1999.”

Fact:

Lodge again is both deliberately confusing power and energy or he's citing a reporter who is confused. In either case he should know better.

In 1999, wind turbines in Denmark generated 3 TWh (billion kWh), or about 10% of Danish electricity supply.<sup>7</sup> It is possible that Lodge confused 1990 generation with that in 1999. Either way, he got wrong, by a wide margin.

Myth:

Wind Chill continues the theme that wind energy just doesn't do any good: “The increase in the demand for coal, needed to plug the gap left by underperforming wind farms, meant that Danish carbon emissions rose by 36% in 2006.”

Fact:

One has to wonder where Lodge get's his data—despite his footnotes.

- In 2008, Denmark's 5,100 wind turbines generated 6.98 TWh (billion kWh), according to the Danish government.<sup>8</sup> It's impossible to generate

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<sup>7</sup> Energy Statistics 2007, Danish Energy Agency, [http://www.ens.dk/graphics/UK\\_Facts\\_Figures/Statistics/yearly\\_statistics/2007/energy%20statistics%202007%20uk.pdf](http://www.ens.dk/graphics/UK_Facts_Figures/Statistics/yearly_statistics/2007/energy%20statistics%202007%20uk.pdf), page 9, visited April 15, 2009.

<sup>8</sup> [http://www.ens.dk/graphics/Energi\\_i\\_tal\\_og\\_kort/energidata\\_kort/stamdataregister\\_vindmoeller/oversigtstabeller\\_vindmoeller/Oversigtstabeller\\_UK-DK\\_20090319.xls](http://www.ens.dk/graphics/Energi_i_tal_og_kort/energidata_kort/stamdataregister_vindmoeller/oversigtstabeller_vindmoeller/Oversigtstabeller_UK-DK_20090319.xls), visited April 11, 2009.

that much electricity and not offset a substantial amount of carbon dioxide. Each kWh of wind energy offsets about 1 kg of carbon dioxide from a coal plant and about half that from natural gas. Thus, each kWh from Danish wind turbines will offset between 0.5 to 1 kg of carbon dioxide because Danish electrical energy is a mix from the generation by both resources.

- Average carbon dioxide emissions (emissions adjusted for weather and exports) in Denmark from 1990-2007 fell 31%, according to the Danish government. Yes, fell, not increased as claimed.
- Average carbon dioxide emissions (emissions adjusted for weather and exports) from coal-fired power generation in Denmark from 1990-2007, fell 41%, according to the Danish government.<sup>9</sup> Yes, again, emissions fell.
- During this period, wind energy's contribution to Danish electricity supply zzincreased 484%.<sup>10</sup>
- During this period, wind energy generation in Denmark increased 1,075%.<sup>11</sup>
- Denmark has effectively cut its generation of coal-fired power and reduced its carbon dioxide emissions in contrast to Lodge's claim otherwise.

Myth:

“the wind turbines therefore consume more power from the grid than they produce. In other words, the turbines can be a net energy consumer.”

Fact:

Of course they can be consumers of energy, just like any other power plant. Whenever any power plant is turned off, it consumes electricity. If the wind is not blowing, the wind turbine is waiting for the wind and as it does it consumes a small amount of electricity. Lodge presents this little fact as some kind of great revelation. Either he doesn't know how power plants operate, or he is simply setting up a straw—or nonsensical—argument that he can knock down. In either case, it is deceitful, if not simply intellectually dishonest.

Myth:

“And wind is not cheap. Danish electricity costs for the consumer are the highest in Europe.”

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<sup>9</sup> [http://www.ens.dk/graphics/UK\\_Facts\\_Figures/Statistics/yearly\\_statistics/2007/Figures2007.xls](http://www.ens.dk/graphics/UK_Facts_Figures/Statistics/yearly_statistics/2007/Figures2007.xls), visited April 10, 2009.

<sup>10</sup> [http://www.ens.dk/graphics/UK\\_Facts\\_Figures/Statistics/yearly\\_statistics/2007/energy%20statistics%202007%20uk.pdf](http://www.ens.dk/graphics/UK_Facts_Figures/Statistics/yearly_statistics/2007/energy%20statistics%202007%20uk.pdf), visited April 10, 2009, page 11.

<sup>11</sup> [http://www.ens.dk/graphics/UK\\_Facts\\_Figures/Statistics/yearly\\_statistics/2007/energy%20statistics%202007%20uk.pdf](http://www.ens.dk/graphics/UK_Facts_Figures/Statistics/yearly_statistics/2007/energy%20statistics%202007%20uk.pdf), visited April 10, 2009, page 12.

Fact:

I debunked this myth in my 1995 book and nothing has changed since then. Danish engineers particularly bristle at this accusation from someone living in Britain. Lodge plays a clever word game here. He uses “costs for the consumer” then conflates that with the cost of generation of electricity. Again, he hopes his readers can’t see through his sleight of hand.

- Denmark’s electricity generation is not among the most costly in Europe.
- Danes can produce electricity just as cheaply as anyone else.<sup>12</sup>
- Danish electricity generation is less costly than that in Britain.
- Danes do, however, pay hefty taxes on energy, including electricity.
- In 2007, 56% of the cost to the Danish electricity consumer was VAT, tax, and carbon tax (~\$0.015 CAD/kWh for the carbon tax alone). That is, more than half the cost of Danish electricity is tax. The high cost of Danish electricity is a result of deliberate government policy and not, as claimed, due to wind energy.<sup>13</sup>

Myth:

“So the experience of Denmark – often hailed for its pioneering development of wind farms – is that wind energy is expensive, inefficient and not even particularly “green”.”

Fact:

As I’ve shown, not one of Lodge’s claims in Wind Chill is substantiated. We can then conclude that contrary to his assertion, wind energy in Denmark is a good bargain, efficient, and green.

Nuclear Costs

Myth:

In Wind Chill there are some amazing little gems, such as this one: “the cost of electricity generated by nuclear power (including the cost of decommissioning) is 2.3p per kWh”.

Fact:

The data for this statement is from a British study done in 2004. No recent study would ever make such a claim. Estimated costs, and they’re all estimated

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<sup>12</sup> [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-QA-08-045/EN/KS-QA-08-045-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-QA-08-045/EN/KS-QA-08-045-EN.PDF), visited April 11, 2009.

<sup>13</sup> 1990-2007 Danish Energy Agency statistics, <http://www.ens.dk/sw16508.asp>, visited April 10, 2009.

because no one has built one of these plants in the West in decades, are almost an order of magnitude higher. German estimates of the external costs of nuclear are up to nearly €2/kWh. Yes, two Euros per kWh, mostly for the cost of insurance subsidies.<sup>14</sup>

## Birds & Bats

Lodge gets another one right. He writes “The spinning turbine blades kill and maim birds and bats.” What, you say, you’re a wind proponent? Why would you agree with Lodge? Simple, it’s true. Wind turbines can and do kill birds and bats. As I say in every presentation, it is a question of how many are killed and what effect will this have on the survivability of the species or the breeding populations.

Lodge presents this fact as a stake through the heart of wind energy. Far from it. It’s just another problem that has to be skillfully dealt with when considering a wind project.

Let’s take the position of the National Audubon Society, the principal organization protecting birds in the US. “Audubon strongly supports properly-sited wind power as a clean alternative energy source that reduces the threat of global warming. Wind power facilities should be planned, sited and operated to minimize negative impacts on bird and wildlife populations.”<sup>15</sup>

Enough said. I’ve written elsewhere about birds, bats, and wind turbines.<sup>16</sup> The topic is covered in all my books.

## Noise

“The American Wind Energy Association acknowledges that a turbine is audible 800 feet away,” says Lodge in *Wind Chill*. Let’s give Lodge another right answer. Indeed, wind turbines can be heard at some distance. And, just what is the point, then? Lodge again takes the reader for a fool by slyly associating unacceptable noise with a noise that is “audible”. I can hear wind turbines when most others can’t because I’ve trained myself to hear them. That something is audible or that you can hear should never be confused with any noise standard that’s based on health, safety, or annoyance. Noise standards are based on objective measurements, not whether something is audible. Wind turbines can and will be heard. They are not silent. Anyone who says--or implies--otherwise doesn’t know what they’re talking about.

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<sup>14</sup> [Electricity from Renewable Energy Sources](#): What Does it Cost Us? (March, 2008), Page 35, visited April 13, 2009.

<sup>15</sup> [Audubon's Position on Wind Power](#), visited April 15, 2009.

<sup>16</sup> See [Wind Energy & the Environment](#), visited April 14, 2009.

Lodge goes to write about various noise studies in an ill-informed manner. He frequently gives noise measurement without any reference to either the frequency or the frequency scale used. This is not only misleading, it is technically incorrect. He cites anecdotal statements and then includes noise measurements designed to scare the uniformed. He obviously knows his job because Lodge's handy work is seen throughout the web.

For example, again Lodge quotes one author, G.P. van den Berg, noting that wind turbines "are audible" and "readily discernible". As noted earlier, this is meaningless. The work quoted by Lodge has been widely discussed—at length.<sup>17</sup>

Noise is not a new issue and Wind Chill sheds no light--or heat--on the subject but obfuscation.

### Britain's Looming Energy Crisis

Let's chalk another one up to Lodge in Wind Chill. Britain is facing a looming energy crisis. But unlike Lodge's contention that it's dastardly policy encouraging renewables that's caused the crisis. What has resulted in Britain's amazing vulnerability to interruptions of natural gas is the nation's foolish reliance on policy advice from think tanks such as the Centre for Policy Studies.

It's clear from Wind Chill that the author doesn't fully understand power, energy, and power systems. And yet it is advisers such as Lodge who held sway in British energy policy circles for more than two decades. During that time Britain rapidly depleted their one-time gift of oil and gas reserves in the North Sea in slavish homage to a political ideology that has left the once-proud country on the verge of bankruptcy. These very same policies destroyed the coal industry that Lodge now wants to resurrect. But even more damning is the policy choice made nearly a quarter-century ago to destroy Britain's budding wind industry.

Now that Danish, German, and Spanish wind turbine manufacturers dominate the multi-billion dollar world market, British policy "advisers" such as Lodge can only look bitterly across the Channel and criticize the "continentals' success with transparently trumped up charges.

It's sad, really. At one time Britain had some of the world's best wind engineers. I wrote about them, I quoted them, I respected them. They're all gone now. People, such as Lodge, and his think tank drove them and their jobs away.

### The Author and the Centre for Policy Studies

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<sup>17</sup> [Wind Turbine Facilities Noise Issues](#) by Ramani Ramakrishnan, Ontario Ministry of the Environment, December, 2007, visited April 15, 2009.



Suffice it to say that the Centre for Policy Studies is a right-wing think tank similar to those found across North America. It proudly acknowledges this in *Wind Chill*: “The Centre for Policy Studies was founded by Sir Keith Joseph and Margaret Thatcher in 1974 . . .”<sup>18</sup> The organization was founded by the British architects of one of the world’s most thoroughly discredited “isms”: Thatcherism. If that’s not enough to give perspective on the political slant of the Centre, the author, Tony Lodge, has penned such objective studies as “Clean Coal – A Clean, Secure and Affordable Alternative” for CPS in 2007, and “Electrifying Britain – Forward with Coal, Gas or Nuclear?” for the Economic Research Council in 2005.

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<sup>18</sup> *Wind Chill: Why wind energy will not fill the UK’s energy gap*, by Tony Lodge, Centre for Policy Studies, <http://www.cps.org.uk/cpsfile.asp?id=1026>, 2008, Page 48, visited April 13, 2009.